

# (12) UK Patent Application (19) GB (11) 2 252 540 (13) A

(43) Date of A publication 12.08.1992

(21) Application No 9009672.8

(22) Date of filing 30.04.1990

(71) Applicant  
Lezayre Investments Ltd  
(Incorporated in Ireland)  
3 Fitzwilliam Place, Dublin 2, Ireland

(72) Inventor  
Clive Erik Brockdorff

(74) Agent and/or Address for Service  
Lezayre Investments Ltd  
c/o C. Brockdorff, The Old Vicarage, Hempstead Holt,  
Norfolk, NR25 6TW, United Kingdom

(51) INT CL<sup>5</sup>  
B65B 9/06 25/14 // B65B 51/02 59/00

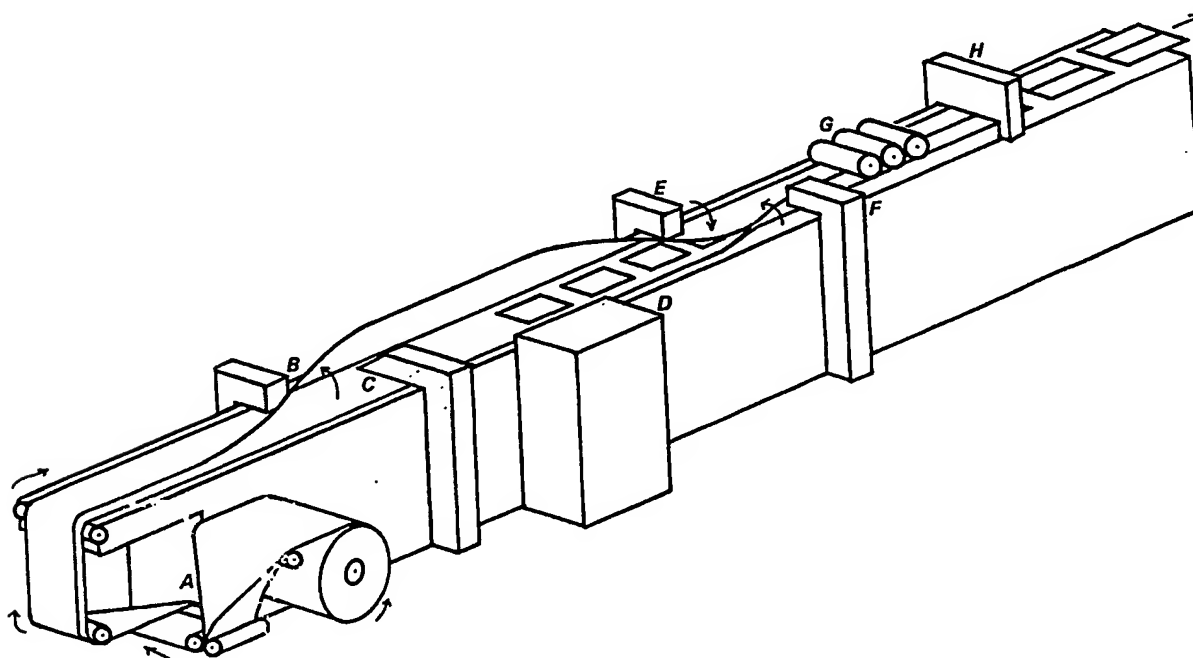
(52) UK CL (Edition K)  
B8C CW23  
U1S S2263

(56) Documents cited  
GB 2156764 A GB 2028757 A GB 1500328 A  
GB 1446696 A GB 1356981 A GB 1141805 A  
GB 1100402 A US 4520615 A US 4219988 A

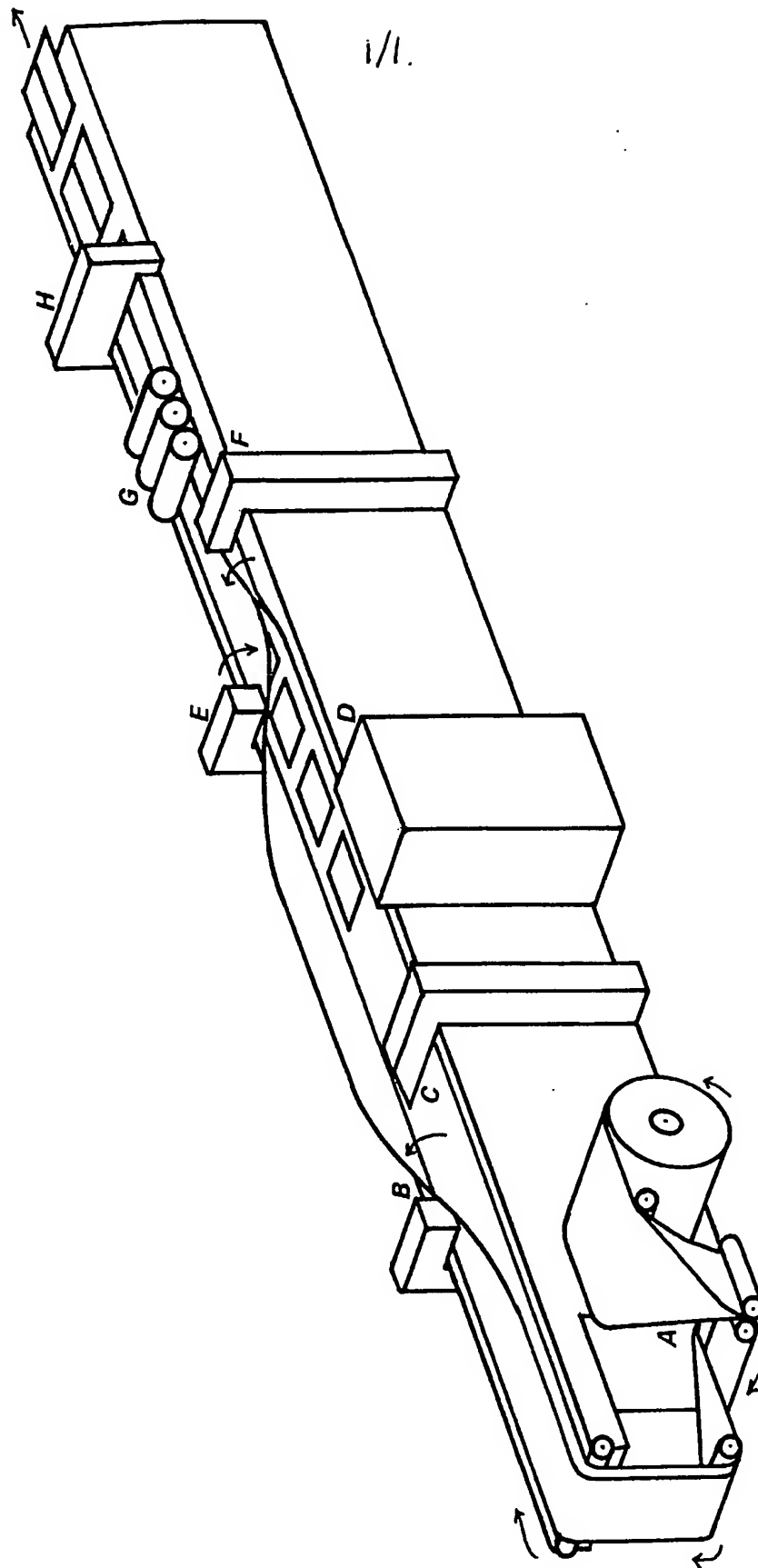
(58) Field of search  
UK CL (Edition K) B8C CP12 CP13 CP7 CW12 CW17  
CW19 CW20 CW23  
INT CL<sup>5</sup> B43M, B65B

## (54) Reel-fed enveloping machine

(57) A machine is provided to collate a variety of loose inserts and envelope them for mailing purposes using reel-fed stock. The envelope is formed round the collated set of loose inserts and may be made of a variety of different types of paper both plain and printed. The machine is provided with rollers G for drawing a paper web from a reel, over a folding kite A and turner bar, and along the machine bed during which the upper half of the now-folded web is lifted at B, a pattern of hot melt glue applied at C, a pre-collated set of inserts taken by grippers D and moved into position in register with the moving web, the upper web half brought into contact with the upper web half at E, a flap-forming web portion folded over at F and the formed envelopes separated by a guillotine H. The loose inserts may be infinite in their variety of thickness and size (shape).



GB 2 252 540 A



DESCRIPTION

This invention relates to a method of forming an envelope around a pre-collated set of loose inserts in a variety of sizes on a continuous basis.

There is currently available a range of machines which automatically place loose inserts into pre-formed envelopes and in addition highly specialised printing presses which print and form envelopes in a single process from one individual stock of paper (i.e. not pre-collated loose inserts).

According to the present invention, there is presented to the machine a continuous reel of paper which may have been pre-printed. This is drawn over a folding kite (A) and through a turner bar to run vertically up to the machine bed and then horizontally where the top half of the web is lifted (B) to 90° of the bottom half. At this point, a pattern of hot melt glue is applied (C) and the pre-collated sets of loose inserts are taken by grippers (D) and moved into position in register to the moving web of paper. The top half of the web is now brought into contact with the bottom half, (E) and the envelope flap is formed and glued by a plough turn and finger wheel mechanism (F). Through the main drawing rollers (G) and presented to the reciprocating guillotine (H) which cuts into the lay flat tube of paper at a cycling speed of up to 15,000 per hour and exits the machine.

CLAIMS

- 1) a machine capable of receiving pre-collated sets of loose inserts for mailing, forming paper around them so to enclose them at high speed on a continuous basis and present them for mailing in the normal way.
- 2) a machine as claimed in claim 1 with such adjustments as to allow a variety of sizes of envelopes or pockets to be produced.
- 3) a machine as claimed in claim 1 & 2 with a programmable method of applying a pattern of hot-melt glue to facilitate a variety of sizes and shapes to be made.
- 4) a machine as claimed in claim 1-3 equipped with a variety of feeder stations to collate sets of loose inserts of a variety of shapes and sizes and present these sets to the forming module.
- 5) a machine as claimed in claim 1-4 so designed that the sets of loose inserts can be presented to the forming module in register to the pattern of hot melt glue.
- 6) a machine as claimed in claim 1-5 so designed as to be able to hold the sets of pre-collated inserts in register by means of a driven belt.
- 7) a machine as claimed in claim 1-6 so designed as to be able to grip a set of pre-collated loose inserts and move them via an air operated valve into position on the continuous moving web of film and to draw the web of paper over a plough and finger wheel section to form the flap of the envelope.
- 8) a machine as claimed in claim 1-7 so designed as to be able to guillotine a continuous moving web of paper at high speed via a reciprocating mechanism.

Patents Act 1977  
Examiner's report to the Comptroller under  
Section 17 (The Search Report)

Application number

9009672.8

Relevant Technical fields

(i) UK CI (Edition K ) B8C CW17, CW12, CW19, CW20,  
CW23, CP7, CP12, CP13

(ii) Int CI (Edition ) B65B: B43M

Search Examiner

J A WALLIS

Databases (see over)

(i) UK Patent Office

(ii)

Date of Search

28 June 1990

Documents considered relevant following a search in respect of claims

1 at least

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2156764 A (GREENWOOD) - whole document relevant	1 at least
X	GB 2028757 A (GREGG ETC) - e.g figures 1-5	1 at least
X	GB 1500328 A (F L SMITH ETC) exemplifies such 'mailing machines following discrete blanks about inserts	1 at least
X	GB 1446696 (SOLVAY ETC) whole document relevant	1 at least
X	GB 1356981 (AUTOMATED - whole document packaging relevant	1 at least
X	GB 1141805 (GEVAERT ETC) whole disclosure pertinent	1 at least
X	GB 1100402 (EASTMAN ETC) whole disclosures relevant	1 at least
X	US 4520615 (EAGLER ETC) e.g. lines 54-56, column 2	1 at least
X	US 4219988 (SHANKLIN) whole document pertinent	1 at least
C66AAE		

SF2(p)

Category	Identity of document and relevant passages - 4 -	Relevant to claim(s)

#### Categories of documents

**X:** Document indicating lack of novelty or of inventive step.

**Y:** Document indicating lack of inventive step if combined with one or more other documents of the same category.

**A:** Document indicating technological background and/or state of the art.

**P:** Document published on or after the declared priority date but before the filing date of the present application.

**E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.

**&:** Member of the same patent family, corresponding document.

**Databases:** The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).